Serial No. 10/606,721

Docket No. NG(ST)6445
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REMARKS

Claims 1-21 are currently pending in the subject application, and are presently under consideration. Claims 1-21 are rejected. Claims 1, 5, 9, 14, 16, 17, 19, 20, and 21 have been amended. Claims 2, 7, 8, 18 have been cancelled. New claims 22-26 have been added. It is respectfully submitted that the amendments to the currently pending claims and the addition of the new claims do not add new matter to the Present Application. Favorable reconsideration of the application is requested in view of the amendments and comments herein.

I. Rejection of Claims 1-6, 9-11, 14, 15, and 17-19 Under 35 U.S.C. §102(b)

Claims 1-6, 9-11, 14, 15, and 17-19 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Publication No. 2002/0061068 to Leva, et al. ("Leva"). Claims 1, 5, 9, 14, 17, and 19 have been amended. Claims 2 and 18 have been cancelled. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 1 has been amended to substantially recite the elements of claim 2, now cancelled. Specifically, amended claim 1 recites that the signal modifier comprises a signal shaper that shapes a modulation constellation of the input signal to reduce the peak values associated with the input signal. In the Office Action dated December 8, 2006 (hereinafter "Office Action"), the Examiner asserts that Leva discloses a signal shaper to reduce peak signals (Office Action, page 2; citing Leva, FIG. 1). Representative for Applicant respectfully disagrees.

Leva teaches modulation of a string of baseband OFDM symbol data blocks in digital form by performing an Inverse Fast Fourier Transform (IFFT) (Leva, paragraphs 22 and 23). The IFFT operation is performed once the data blocks have been mapped into complex points of the constellation chosen for the modulation of the single carriers (Leva, paragraph 23). Peaks are reduced in the system of Leva by summing an anti-peak signal to the already modulated signal following the IFFT operation (Leva, paragraph 45). Therefore, the system of Leva reduces peaks in a signal that has already been modulated based on complex point constellation mapping. Thus, Leva does not teach a signal shaper that shapes a modulation constellation of the input signal to reduce the peak values, as recited in claim 1. Accordingly, Leva does not anticipate

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claim 1. Withdrawal of the rejection of claim 1, as well as claims 3-6 which depend therefrom, is respectfully requested.

Claim 9 has been amended to recite that the instruction signal is associated with a scale factor of the input signal to modify the input signal. As described above, Leva teaches that peaks are reduced in the system of Leva by summing an anti-peak signal to the already modulated signal following the IFFT operation (Leva, paragraph 45). Representative for Applicant respectfully submits that Leva does not teach that an instruction signal is associated with a scale factor of an input signal to modify the input signal, as recited in claim 9. Therefore, Leva does not anticipate claim 9. Withdrawal of the rejection of claim 9, as well as claims 10 and 11 which depend therefrom, is respectfully requested.

Claim 14 has been amended to recite that the instruction signal is transmitted in a parallel relationship, such that the instruction signal is transmitted concurrently with the modified input signal, and that the means for reconstructing employs the instruction signal that was transmitted in the parallel relationship with the modified input signal. Leva teaches that the side-information relating to the anti-peak signal is modulated into the signal in the subsequent symbol, such that the auxiliary information related to the current symbol is to be transmitted in the next symbol (Leva, paragraphs 46 and 54). Thus, Leva teaches that the side-information for the anti-peak signal is transmitted subsequent to the modified signal itself. Therefore, Leva does not teach that the instruction signal is transmitted in a parallel relationship, such that the instruction signal is transmitted concurrently with the modified input signal, and that the means for reconstructing employs the instruction signal that was transmitted in the parallel relationship with the modified input signal, as recited in claim 14. Accordingly, Leva does not anticipate claim 14. Withdrawal of the rejection of claim 14, as well as claims 15 and 16 which depend therefrom, is respectfully requested.

Claim 17 has been amended to recite combining the modified input signal and the instruction signal into a transmission signal in a sequential relationship, such that the instruction signal is transmitted prior to the modified input signal. As described above, Leva teaches that the side-information relating to the anti-peak signal is modulated into the signal in the

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subsequent symbol (Leva, paragraphs 46 and 54). Therefore, combining the modified input signal and the instruction signal into a transmission signal in a sequential relationship, such that the instruction signal is transmitted prior to the modified input signal, as recited in claim 17. Accordingly, Leva does not anticipate claim 17. Withdrawal of the rejection of claim 17, as well as claim 19 which depends therefrom, is respectfully requested.

For the reasons described above, claims 1, 3-6, 9-11, 14, 15, 17, and 19 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

II. Rejection of Claims 12, 13, 20, and 21 Under 35 U.S.C. §102(b)

Claims 12, 13, 20, and 21 stand rejected under 35 U.S.C. §102(b) as being anticipated by "*OFDM with Reduced Peak-to-Average Power Ratio by Multiple Signal Representation*", Vol. 51, No. 1/2, 2/1997, XP 000991143 by Muller, et al. ("Muller"). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Claim 12 recites a signal splitter that decomposes an input signal into a plurality of replica signals, each of the plurality of replica signals having a maximum peak value below the maximum peak value of the input signal, a signal combiner that sequential orders the plurality of replica signals for transmission, and a power amplifier that amplifies the sequentially ordered plurality of replica signals to provide a transmission signal. In the Office Action, the Examiner asserts that Muller discloses the elements of claim 12 (Office Action, page 3; citing Muller, FIG. 5; pages 59 and 63). Representative for Applicant respectfully disagrees.

Muller teaches that an information bearing subcarrier set is divided into V pairwise disjointed sub-blocks, which aggregately represent the input signal (Muller, Section V.1). However, the V pairwise disjointed sub-blocks are not replica signals, as recited in claim 12. In the system of Muller, each of the V pairwise disjointed sub-blocks are divided in such a way that every used subcarrier within the OFDM symbol is represented in exactly one of the V sub-blocks. Thus, all carrier positions in a given sub-block that are represented in another sub-block are set to zero. This is demonstrated by FIG. 4 of Muller, which demonstrates that each of the sub-blocks is distinct relative to the others. The V sub-blocks in the system of Muller are thus

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neither replicas of the original signal nor of each other. Therefore, Muller teaches that peaks are reduced by rotating the sub-blocks with respect to each other and combining them prior to transmission, and not by decomposing the input signal into a plurality of replica signals, as recited in claim 12. Furthermore, because Muller teaches that the divided sub-blocks are combined prior to transmission, Muller likewise does not teach a signal combiner that sequentially orders the plurality of replica signals for transmission, as also recited in claim 12. Accordingly, Muller does not anticipate claim 12. Withdrawal of the rejection of claim 12, as well as claim 13 which depends therefrom, is respectfully requested.

Claim 13 depends from claim 12, which is not anticipated by Muller for the reasons described above. Therefore, claim 13 should likewise be allowed over the cited art. In addition, claim 13 recites that the instruction signal informs a receiver of at least one of the number of replica signals and scaling associated with the replica signals. Muller teaches that side information of a set of rotation factors is transmitted to the receiver (Muller, Section V.2). However, because Muller does not teach division of the signal into replica signals, and does not teach that peaks are reduced based on the scaling of the replica signals, Muller likewise does not teach that the instruction signal informs a receiver of at least one of the number of replica signals and scaling associated with the replica signals, as recited in claim 13. Therefore, Muller does not anticipate claim 13. Withdrawal of the rejection of claim 13 is respectfully requested.

Claim 20 recites modifying an input signal into a plurality of replica signals, each of the plurality of replica signals having a peak value below the maximum peak value of the input signal, and sequentially ordering the plurality of replica signals into a transmission signal. For the reasons described above regarding claim 12, Muller does not anticipate claim 20. Withdrawal of the rejection of claim 20, as well as claim 21 which depends therefrom, is respectfully requested.

For the reasons described above, claims 12, 13, 20, and 21 should be patentable over the cited art. Accordingly, withdrawal of this rejection is respectfully requested.

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